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The influence of the secondary relaxation processes on the structural relaxation in glass-forming materials

Khamzin A., Popov I., Nigmatullin R.
Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia

Abstract

In the frame of fractional-kinetic approach, the model of the structural α-relaxation in the presence of the secondary β-relaxation processes is suggested. The model is based on the rigorous bond between β-processes with α-process and leads to the generalized and justified expression for the complex dielectric permittivity (CDP). It allows to form a new sight on the problem of the fitting of multi-peak structure of the dielectric loss spectra in glass-forming materials. The consistency of the CDP expressions obtained is based on a good fit of experimental data for binary methanol-water mixtures. © 2013 AIP Publishing LLC.

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